

In the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

- | | | |
|---|----|---|
| 1 | 1. | Cancelled |
| 1 | 2. | Cancelled |
| 1 | 3. | Cancelled |
| 1 | 4. | Cancelled |
| 1 | 5. | Cancelled |
| 1 | 6. | Cancelled |
| 1 | 7. | Cancelled |
| 1 | 8. | (Currently amended) <u>A segmented labyrinth seal having a windback configuration formed around a rotatable shaft for preventing leakage of fluid from a bearing housing, comprising:</u> |
| 2 | | <u>a first face and a second face;</u> |
| 3 | | <u>an exterior cylindrical surface and an interior cylindrical surface each</u> |
| 4 | | <u>extending between said first face and said second face;</u> |
| 5 | | <u>a thread pattern provided on said interior cylindrical surface selectively</u> |
| 6 | | <u>configured in a right-hand direction and a left-hand direction, said thread pattern</u> |
| 7 | | <u>providing the windback configuration, wherein said thread pattern has said right-</u> |
| 8 | | |
| 9 | | |

hand direction when the rotatable shaft is rotating clockwise when looking down the rotatable shaft toward the bearing housing and has said left-hand direction when the rotatable shaft is rotating counter-clockwise when looking down the rotatable shaft toward the bearing housing;

said thread pattern being formed of a plurality of profiled teeth, said plurality of profiled teeth having first sides, second sides, and connecting sides extending between said first sides and said second sides, wherein leading edges are formed where said first sides join said connecting sides and trailing edges are formed where said second sides join said connecting sides, said first sides and said second sides being slanted toward said second face, and a pressure drop is taken over said plurality of profiled teeth; and

a channel tracing said thread pattern formed between said first sides and said second sides of adjacent teeth of said plurality of profiled teeth, said channel adapted to capture the fluid from the bearing housing, and to return the fluid to the bearing housing without the need for axial drain holes;

wherein the segmented labyrinth seal is formed from two half-circle shaped segments, said segments having first and second ends, said first ends abutting one another and said second ends abutting one another when the segmented labyrinth seal is assembled; and

~~A segmented labyrinth seal according to claim 7;~~ wherein said first and second ends of one of said two half-circle shaped segments are respectively provided with first and second split-line pins and said first and second ends of the other of said two half-circle shaped segments are respectively provided with first and second holes, said first hole receiving said first split-line pin and said second hole receiving said second split-line pin when said segmented labyrinth seal is assembled, and the position of said first hole and said first split-line pin is staggered in relation to said second hole and said second split-line pin depending on said selective configuration of said thread pattern in said right-hand direction and said left-hand direction.

1 9. (Original) A segmented labyrinth seal according to claim 8, wherein at least one
2 of said two half-circle shaped segments is provided with an anti-rotation pin, said
3 anti-rotation pin being positioned at the apex of said at least one of said two half-
4 circle shaped segments.

1 10. Canceled

1 11. Canceled

1 12. Canceled

1 13. Canceled

1 14. Canceled

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1 17. Canceled

1 18. Canceled

1 19. (Currently Amended) A segmented labyrinth seal having a windback configuration
2 formed around a rotatable shaft for preventing leakage of a fluid from a bearing
3 housing, comprising:

4 two half-circle shaped segments having first and second ends and forming
5 a cylindrical shape, said first ends abutting one another and said second ends
6 abutting one another when said two half-circle shaped segments are assembled
7 to form the segmented labyrinth seal;

8 an exterior cylindrical surface and an interior cylindrical surface, said exterior
9 cylindrical surface and said interior cylindrical surface extending between a first
10 face and a second face;

11 a thread pattern provided on said interior cylindrical surface selectively
12 configured in a right-hand direction when the rotatable shaft is rotating clockwise
13 when looking down the rotatable shaft toward the bearing housing and in a left-
14 hand direction when the rotatable shaft is rotating counter-clockwise when
15 looking down the rotatable shaft toward the bearing housing;

16 first and second split-line pins respectively located on said first and second
17 ends of one of said two half-circle shaped segments, and first and second holes
18 respectively provided on said first and second ends of the other of said two half-
19 circle shaped segments, said first hole receiving said first split-line pin and said
20 second hole receiving said second split-line pin when the segmented labyrinth
21 seal is assembled, wherein the position of said first hole and said first split-line
22 pin is staggered in relation to said second hole and said second split-line pin
23 depending on said selective configuration of said thread pattern in said right-hand
24 direction and said left-hand direction;

25 said thread pattern being formed by a plurality of profiled teeth, said plurality
26 of profiled teeth having first sides, second sides, and connecting sides extending
27 between said first sides and said second sides, said plurality of profiled teeth
28 having a vertical tooth height, and leading edges formed where said first sides
29 join said connecting sides and trailing edges formed where said second sides join
30 said connecting sides, said first sides and said second sides respectively forming
31 first and second angles that are oblique with respect to said interior cylindrical
32 surface, said first angle always being greater than said second angle, wherein a
33 pressure drop is taken over said plurality of profiled teeth, said pressure drop
34 being divided into various intermediate pressures between adjacent teeth of said
35 plurality of profiled teeth; and

36 a channel tracing said thread pattern, said channel being wound in a
37 direction opposite to the rotational direction of the rotatable shaft, said channel

38 adapted for capturing the fluid oil from the said bearing housing, and returning the
39 fluid said oil to the said bearing housing without the need for axial drain holes,
40 said vertical tooth height of said plurality of profiled teeth chosen to allow for a
41 primary flow of the fluid said oil directed to the said bearing housing in said
42 channel, and to prevent secondary flow of the fluid said oil in an opposite
43 direction to said primary flow in said channel.

1 20. (Original) A segmented labyrinth seal according to claim 19, wherein at least one
2 of said two half-circle shaped segments is provided with an anti-rotation pin, said
3 anti-rotation pin positioned at the apex of said at least one of said two half-circle
4 shaped segments.